2.1.5 Traffic & Transportation/Pedestrian and Bicycle Facilities

This section discusses the impacts of the proposed SR-74 Widening project on traffic and circulation, both during construction (temporary impacts) and after completion of the project (long-term impacts) within the City, including the six unsignalized intersections within the project limits. This analysis is based on the Draft State Route 74 Lower Ortega Highway Widening Traffic Study prepared in July 2008 (2008 Draft Traffic Study), the SR-74 (Ortega Highway) Supplemental Traffic Study prepared in June 2007 (2007 Supplemental Traffic Study), and the SR-74 (Ortega Highway) Widening Project Traffic Study prepared in November 2006 (2006 Traffic Study).

The entire length of SR-74 that would be widened is currently a two-lane section with left-turn lanes and right-turn lanes at intersections and a painted median at various locations within the City portion (see Figure 1-2 in Chapter 1). The widening of SR-74 from the City/County (City/County) limits to east of the La Pata Avenue/ Antonio Parkway intersection, which is within unincorporated Orange County, has already been evaluated and approved in three environmental documents prepared by the County for the Ranch Plan (see Section 1.2, Project Background). Therefore, this section of the Final EIR discusses traffic impacts within the City limits only, which is the proposed project from Calle Entradero to the City/County line.

The improvements would provide one additional 12 ft wide lane in each direction, as well as a 12 ft wide painted median. The widening will occur primarily on the north side to minimize removal of mature trees and to retain the existing sidewalk on the south side of SR-74. Throughout most of the proposed project length, a 5 ft paved shoulder will be provided on each side of the roadway to accommodate Class II (striped on-road) bicycle facilities. From Avenida Siega to the City/County limits, the shoulder/bike lane will transition to an 8 ft wide shoulder to merge with the County portion of the widening project.

Six roadways intersect with SR-74, from the south, within the project limits. They are: Calle Entradero, Via Cordova/Hunt Club Drive, Via Cristal, Strawberry Lane, Via Errecarte, and Avenida Siega. North of SR-74, Via Cordova becomes Hunt Club Drive, and Avenida Siega becomes Shade Tree Lane with Via Cristal and Via Errecarte as T-intersections. To the north of SR-74, Strawberry Lane, Toyon Drive and Palm Hill Drive provide access to hillside private properties. Each intersection will be modified/widened to accommodate the additional lanes, median, and

shoulders. Where there are existing right-turn pockets (Via Cordova and Via Cristal), the right-turn pockets will remain. No new intersections are proposed, and no existing intersections are proposed to be signalized (no intersections meet a signal warrant).

Sidewalks exist intermittently throughout the project area on the north and south sides of SR-74. These sidewalks begin outside the western limits of the project. Build Alternative 1 proposes eliminating the sidewalk on the north side of SR-74 to accommodate the widening. The south sidewalk will be maintained in its current location with the exception of a portion of sidewalk at the intersection of Via Cordova, where the sidewalk will be shifted to the south and reconstructed to provide for the right-turn pocket at this intersection. A new sidewalk will be constructed on the south side to just east of Avenida Siega, where it will connect to the County sidewalk system being constructed with the County portion of the SR-74 Widening project.

Under Build Alternative 2, the sidewalk on the north side of SR-74 between Calle Entradero and Via Cordova would be reconstructed. Under this alternative, the existing meandering sidewalk would be reconstructed as a straight sidewalk (not curvilinear) within the existing public right-of-way. A short retaining wall would be required along the existing limit of the public right-of-way, which is delineated by the south side edge of the existing equestrian trail.

The Build Alternatives differ only with respect to impacts on landscape features and the provision of a sidewalk on the north side. There is no difference as far as traffic characteristics are concerned, and the variations are simply addressed here as the Build Alternatives.

The 2008 Draft Traffic Study evaluated the project in a 2035 time frame, comparing the No Build Alternative with the Build Alternatives. The traffic forecast data used for the analysis was prepared using the South County Sub-Area Model (SCSAM) which, in turn, was derived from the Orange County Transportation Analysis Model (OCTAM) Version 3.1. The SCSAM has undergone certification by the OCTA and thereby is consistent with the subarea modeling guidelines established by that agency. Consistency requirements ensure that traffic model data are derived in a regional context, in this case with OCP-2004 demographic projections for Orange County and General Plan land use build out for the cities of Mission Viejo, San Juan Capistrano, Laguna Niguel, and the communities of Las Flores and Ladera Ranch. For the Rancho Mission Viejo area east of the City, the land use plan as approved in

2004 and modified under a subsequent Settlement Agreement was used in the traffic forecast assumptions.

Other considerations used in the traffic forecast database included future roadways in south Orange County, including MPAH additions such as La Pata Avenue and a southward extension of State Route 241 (SR-241) along the recently adopted alignment. A more detailed discussion of the assumptions used in the analysis is included in the *Draft State Route 74 Lower Ortega Highway Widening Traffic Study, July 2008.*

2.1.5.1 Regulatory Setting

The Department directs that full consideration should be given to the safe accommodation of pedestrians and bicyclists during the development of highway projects. It further directs that the special needs of the elderly and the disabled must be considered in all projects that include pedestrian facilities. When current or anticipated pedestrian and/or bicycle traffic presents a potential conflict with motor vehicle traffic, every effort must be made to minimize the detrimental effects on all highway users who share the facility.

The Department is committed to carrying out the 1990 ADA by building transportation facilities that provide equal access for all persons. The same degree of convenience, accessibility, and safety available to the general public will be provided to persons with disabilities.

2.1.5.2 Affected Environment

Roadway System

The existing roadway configuration and traffic conditions of the portion of SR-74 within the project limits are described in detail in Chapter 1 of this Final EIR and are summarized in this subsection. SR-74 extends from I-5 in San Juan Capistrano northeast to Riverside County, where it intersects I-15. It then extends further northeast towards Palm Desert in Riverside County. The existing SR-74 consists of four through lanes from I-5 to approximately 330 ft east of Calle Entradero. It transitions to two through lanes east of Via Cordova to west of Avenida Siega.

SR-74 is part of the State Freeway and Expressway system. It provides interregional access between the employment centers of south Orange County and the residential centers of Riverside County. The highway also carries a high traffic volume of trucks with two axles or more during the weekdays and recreational travelers on the weekends.

There are no high occupancy vehicle (HOV) lanes, on-street parking spaces, or bicycle facilities within project limits. Class II (striped on-road) bicycle facilities would be provided as part of the Build Alternatives. In addition, SR-74 is not being used for regular transit services by OCTA or the Riverside Transit Agency (RTA).

Traffic volume is usually discussed in terms of average daily traffic (ADT) and/or intersection capacity utilization (ICU). The ability of a highway to accommodate traffic is typically measured in terms of LOS. LOS is based on the ratio of traffic volume to the design capacity of the facility. LOS is expressed as a range from LOS A (free traffic flow with low volumes and high speeds resulting in low densities) to LOS F (traffic volumes exceed capacity and result in forced flow operations at low speeds resulting in high densities). Pictorial representations of the six levels of service are provided in Chapter 1 (see Figure 1-3).

Traffic Conditions at Mainline and Intersections

The existing ADT and peak-hour volumes within the project limits on the SR-74 (both directions) are approximately 27,000 and 2,530 vehicles per hour (vph) respectively for the year 2008. According to the 2008 Draft Traffic Study, truck traffic is estimated to be 19.6 percent of the total traffic within the project limits. Existing (2008) mainline and intersection analyses are discussed in detail in the Traffic Study prepared in May 2008. The report includes synchro and ICU worksheets for LOS and Measure of Effectiveness (MOE) calculations.

The volume-to-capacity (v/c) ratios for mainline segments along SR-74 within the project limits were calculated based on peak-hour traffic volumes for existing (2008), 2035 No Build, and 2035 Build conditions. As can be seen from Table 2.1.5-1 (Mainline LOS Summary), in the existing conditions for both AM and PM peak hours, all roadway segments within the project limits operate at LOS D (which meets the desired LOS threshold for this location) except at the Via Cordova intersection during the AM peak hours where it operates at LOS E.

For a two-lane highway operating at LOS D, the v/c ratio ranges from 0.69–0.88 (2008 Draft Traffic Study), which means that the traffic along the roadway segment is approximately 70–90 percent of the available capacity. In year 2035 with the No Build Alternative, the traffic will be operating at LOS F. At LOS F, the v/c ratio is greater than 1.0 (2008 Draft Traffic Study), which means that the traffic along the roadway segment is more than the available capacity. Therefore, the SR-74 roadway

Table 2.1.5-1 Mainline LOS Summary

Location	Lane Design Capacity	Existing					2035 No Build					2035 Build				
		No. of Lanes	Peak-Hour Facility Capacity	Peak-Hour Volume[1]	V/C	LOS	No. of Lanes	Peak-Hour Facility Capacity	Peak-Hour Volume[1]	V/C	LOS	No. of Lanes	Peak-Hour Facility Capacity	Peak-Hour Volume	V/C	LOS
SR-74 w/o Via Cordova																
AM	2,100	1	1,785	1,617	0.94	E	1	1,785	2,188	1.23	F	2	4,200	2,188	0.52	C
PM	2,100	1	1,785	1,360	0.76	D	1	1,785	2,007	1.12	F	2	4,200	2,007	0.48	C
SR-74 w/o Via Cristal																
AM	2,100	1	1,785	1,577	0.88	D	1	1,785	2,148	1.20	F	2	4,200	2,148	0.51	C
PM	2,100	1	1,785	1,303	0.73	D	1	1,785	1,950	1.09	F	2	4,200	1,950	0.46	B
SR-74 w/o Avenida Siega																
AM	2,100	1	1,785	1,553	0.87	D	1	1,785	2,124	1.19	F	2	4,200	2,124	0.51	C
PM	2,100	1	1,785	1,267	0.71	D	1	1,785	1,914	1.07	F	2	4,200	1,914	0.46	B
SR-74 e/o Avenida Siega																
AM	2,100	1	1,785	1,552	0.87	D	1	1,785	2,123	1.19	F	2	4,200	2,123	0.51	C
PM	2,100	1	1,785	1,263	0.71	D	1	1,785	1,910	1.07	F	2	4,200	1,910	0.45	B

Source: Austin-Foust Associates, Inc., *State Route 74 – Lower Ortega Highway Widening Traffic Study* (July 2008)

[1] Highest one-way volume

Level of service (LOS) values as follows:

A V/C < 0.30
B V/C 0.30 – 0.47
C V/C 0.48 – 0.68
D V/C 0.69 – 0.88
E V/C 0.88 – 1.00
F V/C > 1.00

e/o = east of
V/C = volume-to-capacity (ratio)
w/o = west of

segment within the project limits will be over capacity and heavily congested, resulting in significant delays in the 2035 No Build conditions. The traffic in the 2035 Build Alternatives is projected to operate at LOS C or better. At LOS C, the v/c ratio is less than 0.68, which means that the traffic along the roadway segment is less than 70 percent of the available capacity. Therefore, the SR-74 roadway segment within the project limits will result in minimal delays in the 2035 Build conditions.

A Highway Capacity Manual (HCM) delay analysis was carried out for turning movements to and from SR-74 to six side streets (unsignalized intersections) along the proposed project area: Calle Entradero at SR-74, Via Cordova/Hunt Club Drive at SR-74, Via Cristal at SR-74, Strawberry Lane at SR-74, Via Errecarte at SR-74, and Avenida Siega at SR-74. The side street delay analysis assumed certain gap acceptance parameters and may not be representative of actual conditions or driver behavior at individual locations. The HCM values are accepted practice for comparative purposes when intersection LOS (delay of less than 50 seconds per vehicle [sec/veh]) is being evaluated. The 2008 Draft Traffic Study reveals that the delay experienced by a turning vehicle to and from SR-74 in the existing condition is greater than 50 sec/veh at four (out of six) locations. Only at two of the six locations would turning vehicles experience a delay less than 50 sec/veh (i.e., Via Cordova at SR-74 and Via Cristal at SR-74). In the 2035 No Build conditions, due to the increase in through traffic along SR-74, the delay experienced by a turning vehicle to and from SR-74 is greater than 200 sec/veh at all six study locations. Therefore, in the 2035 No Build conditions, vehicles getting on and off (turning vehicles) SR-74 within the project limits will experience significant delays.

In 2035 Build conditions, to avoid longer traffic delays, the project is providing eastbound left-turn lanes at the unsignalized intersections to allow vehicles exiting minor streets to turn right to eastbound SR-74 and complete a U-turn at the next available intersection. In the 2035 Build conditions, the delay experienced by turning vehicles is considerably lower than the No Build conditions.

Accident Rates

During the 3-year period from September 1, 2004, through August 31, 2007, there were 12 accidents within the project limits. As shown in Table 2.1.5-2, the actual accident rate within the project limits is lower than the average accident rate occurring on highways of similar traffic volumes and road conditions.

Table 2.1.5-2 Accident Rate Summary (Accidents Per Million Vehicle Miles)

	Fatal	Fatal + Injury	Total
Actual	0.00	0.19	0.44
Average	0.018	0.84	1.99

Source: Department District 12, "Traffic Accident Surveillance and Analysis System (TASAS) Table B," (June 2008)

Pedestrian and Bicycle Facilities

Sidewalks exist intermittently throughout the project area on the north and south sides of SR-74. These sidewalks begin outside the western limits of the project.

Currently, there are no bike lanes within the project limits. However, there are existing bicycle facilities located east and west of the project limits.

2.1.5.3 Environmental Consequences

Temporary Impacts

No Build Alternative

The No Build Alternative does not contain a construction component and therefore would not result in temporary impacts within the project limits.

Build Alternatives

During the construction phase of the project, traffic in the vicinity of SR-74 interchanges and the mainline within the project limits could be disrupted by construction equipment and vehicles. Traffic on SR-74 may also be disrupted by trucks hauling construction materials and debris. Under Alternative 2, pedestrian traffic will be temporarily disrupted as the existing sidewalk on the north side of SR-74 between Calle Entradero and Via Cordova is reconstructed. This is considered a less than significant temporary impact. However, with implementation of a TMP (described in Section 1.5.1.12, Construction), temporary impacts to traffic and pedestrians during construction would be reduced to less than significant.

Permanent Impacts

No Build Alternative

The No Build Alternative does not contain a construction component and would retain the existing roadway with one lane in each direction and shoulders in some sections of the highway.

Based on the information contained in the traffic studies and as shown in Table 2.1.5-1, the No Build Alternative would not meet the purpose and need to enhance capacity in the long term. Table 2.1.5-1 (Mainline LOS Summary) shows that for the mainline, the peak-hour traffic volume in one traffic direction increases from 1,550 vph in 2008 to 2,123 vph in 2035. The table also shows that the mainline would operate at LOS F. LOS F implies that the traffic will be heavily congested and speeds will be less than 35 mph, which is less than the current posted speed limit within the project limits of 45 mph. The higher through traffic volumes along SR-74 would result in increased delays for vehicles exiting the minor streets and intending to turn left due to the lack of gaps in the through traffic that would allow these vehicles to complete the left turn.

Traffic demand will exceed capacity and speeds will vary greatly, which will result in significant delays. Traffic congestion through the project limits is expected to worsen in the 2035 future conditions, increasing from 27,000 ADT in 2008 to 39,000 ADT in 2035.

For the 2035 No Build condition, the results are hypothetical since there is inadequate capacity for the demand, and ever-increasing queues would form during the peak hours. Therefore, while the 2035 demand is the same as for the project conditions with the Build Alternative, the number of vehicles served during each of the peak hours is considerably less. As such, the results shown here only partially account for the actual conditions that might prevail.

Based on the discussion above, the No Build Alternative would not address existing and forecast traffic conditions and would have significant impacts to traffic and transportation.

Build Alternatives 1 and 2

The Build Alternatives contain a construction component and would involve widening the existing roadway from one lane in each direction to two 12 ft wide lanes in each direction, adding 5 ft paved shoulders and a 12 ft painted median. The Build Alternatives would result in temporary and long-term changes to traffic volumes and circulation as a result of construction.

As shown in Table 2.1.5-1 and in the 2008 Draft Traffic Study, the Build Alternatives would meet the purpose and need to enhance capacity in the long term. Table 2.1.5-1 shows that for the mainline, the LOS would be at LOS B and C. There would be no delays or minimal delays. Traffic congestion through the project limits is

expected to decrease with the implementation of this project in 2035 (i.e., LOS will improve from LOS D and E in the existing conditions to LOS C in the 2035 Build conditions during AM peak hours, and from LOS D in the existing conditions and LOS C and LOS B in the 2035 Build conditions during PM peak hours).

In the year 2035, for the Build Alternatives, the projected LOS for the various intersections within the project limit ranges from LOS B for the SR-74 through traffic to LOS F for the local streets' left-turn movements. There would be delays, and the operating speeds would be between 35 and 38 mph during AM hours and range from 38 to 41 mph during PM hours. Traffic conditions on intersections within the project limits are expected to improve in 2035 with the Build Alternatives. At intersections within the project limits, the mainline traffic will operate at an acceptable LOS. Due to growth in traffic between 2008 and 2035, there is a projected increase in traffic along SR-74. Traffic exiting local streets and attempting to turn left onto westbound SR-74 would incur extended delays due to a lack of gaps in the through traffic. In order to avoid extended traffic delays, the project is providing eastbound left-turn lanes at the unsignalized intersections to allow vehicles to turn right onto eastbound SR-74 and complete a U-turn at the next available intersection.

Based on the discussion above, Build Alternatives 1 and 2 would improve the LOS in the project area and would have a beneficial impact on traffic and transportation. Traffic and transportation impacts are considered less than significant.

Pedestrian and Bicycle Facilities

In early 2000, the Department conducted a survey in the vicinity of the Via Cordova/Hunt Club Drive intersection to identify the need for a signal. A subsequent survey was conducted September 2008. In both surveys, the pedestrian count and field observation indicated an extremely low demand to warrant a signal light as a means for providing a safe crossing. The project design does not preclude the potential construction of a non-signalized painted crosswalk with a minimum 4 ft wide raised median to reduce the crossing distance of SR-74, nor the construction of a full signal light for pedestrian crossing if such a signal is warranted in the future.

Build Alternative 2 will retain the sidewalk but it would be reconstructed as a straight sidewalk (not curvilinear) within the existing public right-of-way. In addition, it was agreed by the PDT to provide a continuous sidewalk between the City and County area. It required the provision of a new sidewalk on the south side. The project also proposes to utilize shoulders on both sides of the roadway for a Class II bicycle

facility, which is compatible with bicycle facilities that currently exist to the east and west of project limits. This would enhance multimodalism and student access to the high school. It is compatible with the City Circulation Element of the General Plan, and the Bikeways Plan included in the Transportation Element of the Orange County General Plan.

The impacts to pedestrian and bicycle facilities associated with the Build Alternatives are considered less than significant.

Comparative Analysis: No Build and Build Alternatives

The primary MOE used to compare No Build to Build conditions is the average vehicle speed for the section of highway being improved. A comparison between the No Build Alternative in 2035 and the Build Alternatives in 2035 indicates a significant increase in the average travel speed during peak periods. Under the No Build Alternative in 2035, delays would be even greater than that shown here due to queuing effects at the merge points. A summary of the peak hour speeds is shown in Table 2.1.5.3 below.

Table 2.1.5-3 Peak Hour Speed Summary

Location	Average Speed (mph)	
	Eastbound Traffic	Westbound Traffic
Calle Entradero & Ortega Highway		
AM Peak Hour		
Existing	34	40
2035 No Build	31	36
2035 Build	37	36
PM Peak Hour		
Existing	31	40
2035 No Build	8*	38
2035 Build	34	38
Via Cordova/Hunt Club Lane & Ortega Highway		
AM Peak Hour		
Existing	36	39
2035 No Build	33	35
2035 Build	37	35
PM Peak Hour		
Existing	30	40
2035 No Build	22	38
2035 Build	36	38
Via Cristal & Ortega Highway		
AM Peak Hour		
Existing	38	34
2035 No Build	36	34
2035 Build	37	37
PM Peak Hour		
Existing	35	38
2035 No Build	34	35
2035 Build	36	39

Table 2.1.5-3 Peak Hour Speed Summary

Location	Average Speed (mph)	
	Eastbound Traffic	Westbound Traffic
Strawberry Lane & Ortega Highway		
AM Peak Hour		
Existing	37	33
2035 No Build	35	33
2035 Build	37	38
PM Peak Hour		
Existing	35	38
2035 No Build	33	36
2035 Build	36	40
Via Errecarte & Ortega Highway		
AM Peak Hour		
Existing	35	33
2035 No Build	31	34
2035 Build	36	38
PM Peak Hour		
Existing	31	38
2035 No Build	29	36
2035 Build	35	41
Avenida Siega & Ortega Highway		
AM Peak Hour		
Existing	34	32
2035 No Build	32	33
2035 Build	37	39
PM Peak Hour		
Existing	32	38
2035 No Build	29	35
2035 Build	35	40
Average for Section		
AM Peak Hour		
Existing	36	35
2035 No Build	33	34
2035 Build	37	37
PM Peak Hour		
Existing	32	39
2035 No Build	26	36
2035 Build	36	39

Source: Austin-Foust Associates, Inc., *State Route 74 Lower Ortega Highway Widening Traffic Study* (July 2008).
* This low speed reflects the merging from four to two lanes

2.1.5.4 Avoidance, Minimization, and/or Mitigation Measures

The following project component will ensure that impacts to traffic and transportation as a result of the proposed project will be less than significant.

The project shall provide eastbound left-turn lanes at the unsignalized intersections and allow U-turns at these locations to alleviate side street delays. This would facilitate the movement of minor street traffic onto the SR-74 via a right turn and then a U-turn at the next available intersection.

Additionally, a TMP will be implemented to minimize temporary traffic impacts during construction.

2.1.5.5 Level of Significance

The No Build Alternative would not result in temporary impacts to traffic and transportation but would result in significant permanent impacts.

With implementation of the TMP, potential temporary direct or indirect traffic and transportation impacts are considered less than significant. The Build Alternatives would have a beneficial permanent direct or indirect impact on traffic and transportation within the project area; however, traffic exiting minor streets and making a left turn on SR-74 may experience some extended delays, but with the addition of the project feature as explained above in Section 2.1.5.4, these impacts would be considered less than significant.